

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: : Examiner: Darren W. Gorman  
Frank MILLER :  
For: DOSING DEVICE : Art Unit: 3752  
Filed: November 14, 2005 :  
Serial No.: 10/537,032 :

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office via the Office electronic filing system on **April 6, 2009**.

Signature: Wendy Espinal  
Wendy Espinal

## APPEAL BRIEF TRANSMITTAL

SIR:

Transmitted herewith for filing in the above-identified patent application, please find an Appeal Brief pursuant to 37 C.F.R. § 41.37. A two-month period to respond to the Notice of Appeal of January 9, 2009 expired on March 9, 2009. Applicants hereby petition for a one-month extension of time for submitting the Appeal Brief. The extended period for submitting the Appeal Brief expires on April 9, 2009.

The **\$670.00 fee** (\$540 Appeal Brief fee and \$130 extension of time fee) is being **paid by credit card**.

The Commissioner is also authorized to charge payment of any additional fees or to credit any overpayment, to the Deposit Account of Kenyon & Kenyon LLP, Deposit Account No. **11-0600**.

Respectfully submitted,

Dated: April 6, 2009

By: /Clifford A. Ulrich/  
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Signature: /Wendy Espinal/  
Wendy Espinal

**APPEAL BRIEF PURSUANT TO 37 C.F.R. § 41.37**

SIR:

On January 9, 2009, Appellant submitted a Notice of Appeal from the final rejections of claims 14 to 17 and 19 to 28 contained in the Final Office Action issued by the United States Patent and Trademark Office on October 10, 2008 in the above-identified patent application.

In accordance with 37 C.F.R. § 41.37, this brief is submitted in support of the appeal of the final rejections of claims 14 to 17, 19 to 26, and 28 (claim 27 having been canceled in the “Reply Under 37 C.F.R. § 1.116” filed on December 10, 2008). For at least the reasons set forth below, the final rejections of claims 14 to 17, 19 to 26, and 28 should be reversed.

**1. REAL PARTY IN INTEREST**

The real party in interest in the present appeal is ROBERT BOSCH GMBH of Stuttgart in the Federal Republic of Germany, which is the assignee of the entire right, title and interest in and to the present application.

## **2. RELATED APPEALS AND INTERFERENCES**

There are no other prior or pending appeals, interferences or judicial proceedings known by the undersigned, or believed by the undersigned to be known to Appellant or the assignee, ROBERT BOSCH GMBH, “which may be related to, directly affect or be directly affected by or have a bearing on the Board’s decision in the pending appeal.”

## **3. STATUS OF CLAIMS**

Claims 1 to 13, 18, and 27 have been canceled.

Claims 14 to 17, 19 to 24, 26 and 28 stand rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,947,091 (“Krohn et al.”).

Claim 25 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Krohn et al.

Appellant appeals from the final rejection of claims 14 to 17, 19 to 26, and 28.

A copy of all of the pending claims is attached hereto in the Claims Appendix.

## **4. STATUS OF AMENDMENTS**

In response to the Final Office Action issued on October 10, 2008, Appellant filed a “Reply Under 37 C.F.R. § 1.116” on December 10, 2008. The Advisory Action dated December 19, 2008 indicated that the proposed amendments to the claims included in the “Reply Under 37 C.F.R. § 1.116” would be entered. It is Appellants’ understanding that the claims as included in the annexed “Claims Appendix” reflect the current claims.

## **5. SUMMARY OF THE CLAIMED SUBJECT MATTER**

Independent claim 14 relates to a dosing device for a liquid fuel, for input into a chemical reformer in order to recover hydrogen or into a post-combustion device in order to generate heat. Claim 14 recites that the device includes at least one metering device to meter fuel into a metering conduit. *Specification* at page 6, lines 18 to 21. Claim 14 further recites that the device includes a nozzle body adjoining the metering conduit, the nozzle body having at least one spray discharge opening which opens into a metering chamber. *Specification* at page 6, lines 23 to 31. Claim 14 further recites that the device includes at least one heating element with which heat can be delivered to the fuel, including at least one of a wire braid networked in mesh fashion, and a tubular hollow element. *Specification* page 3, lines 1 and 2 and page 6, lines 1 and 2. The heating element delivers heat at least to a part of at least one

of the metering conduit, the adapter, the metering device, and the nozzle body. *Specification* page 3, lines 28 and 29. The fuel is heated into an entirely vapor phase. *Specification* page 8, lines 1 to 8.

## **6. GROUNDS OF REJECTIONS TO BE REVIEWED ON APPEAL**

A. Whether claims 14 to 17, 19 to 24, 26 and 28, which stand rejected under 35 U.S.C. § 102(b), are patentable over Krohn et al.

B. Whether claim 25, which stands rejected under 35 U.S.C. § 103(a), is patentable over Krohn et al.

## **7. ARGUMENTS**

### **A. Rejection of Claims 14 to 17, 19 to 24, 26 and 28 Under 35 U.S.C. § 102(b)**

Claims 14 to 17, 19 to 24, 26 and 28 stand finally rejected under 35 U.S.C. § 102(b) as anticipated by (“Krohn et al.”). It is respectfully submitted that Krohn et al. does not anticipate any of claims 14 to 17, 19 to 24, 26 and 28 for at least the following reasons.

To anticipate a claim, each and every element as set forth in the claim must be found in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of Calif.*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, “[t]he identical invention must be shown in as complete detail as is contained in the . . . claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). That is, the prior art must describe the elements arranged as required by the claims. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990).

Claim 14, as set forth above, relates to a dosing device for a liquid fuel, for input into a chemical reformer in order to recover hydrogen or into a post-combustion device in order to generate heat, and recites, in relevant part, the heating element delivers heat at least to a part of at least one of a metering conduit, an adapter, a metering device, and a nozzle body, and wherein the fuel is heated into an entirely vapor phase.

The Final Office Action does not refer to any portion of Krohn et al. that discloses a heating element that delivers heat at least to a part of at least one of a metering conduit, an adapter, a metering device, and a nozzle body. The Examiner refers to the heating elements 23, 23', 23'' and 43 of Krohn et al. as disclosing the heating element of claim 14. The Examiner further refers to the receptacle sleeve 22 of Krohn et al. as disclosing a metering conduit, the jacket sleeve 50 of Krohn et al. as disclosing an adapter, the injection valve 10 of Krohn et al. as disclosing a metering device, and the valve seat 33,

the holding sleeve 34 and the seal ring 35 of Krohn et al. as disclosing a nozzle body. While Applicant does not necessarily agree with this reading of Krohn et al., Krohn et al. does not disclose, or even suggest, that any of the heating elements deliver heat to any of the reference characters 22, 50, 10, 33, 34 and 35 of Krohn et al. The heating elements of Krohn et al., as shown in Figures 1 to 3, are not located in any position to deliver heat to these features. Nor does the specification disclose, or suggest, such heat delivery.

In the Response to Arguments section of the Final Office Action, the Examiner refers to Krohn et al. at column 5, lines 35 to 38, for the disclosure that liquid fuel that strikes the inside surface of receptacle sleeve 22 will evaporate if the receptacle sleeve is hot enough. This statement does not disclose any application of heat from the heating elements to the receptacle sleeve 22.

Further, Krohn et al. does not disclose, or even suggest, fuel heated into an entirely vapor phase. As set forth in the Specification, for example, at page 8, lines 1 to 8, the fuel is heated until completely evaporated, and is thus in the vapor phase upon entry into the metering chamber. In contrast, Krohn et al. discloses a mix of liquid and gas fuel. For example, at column 5, lines 39 to 57, Krohn et al. repeatedly describes the discharge of a hot mixture of liquid and vaporized fuel.

In the Advisory Action, the Examiner refers to the abstract of Krohn et al., and col. 2, lines 2 and 3, as disclosing this feature. However, the abstract of Krohn et al., and col. 2, lines 2 and 3, merely describe that a fuel vaporizer guarantees a “very good fuel processing in all heating states, i.e., in heating operation for complete or partial vaporization and in the unheated state.” It does not necessarily follow that complete vaporization occurs *prior* to entry into the metering chamber, as must be the case in the present claim. Indeed, Krohn et al. is referring to complete vaporization occurring later on, *in the metering chamber*, and only partial vaporization occurring prior to entry into the metering chamber. For example, Krohn et al., on col. 5, lines 39 to 47, states that “[d]ue to the vaporization of fuel, the pressure inside fuel vaporizer 16 increases until it reaches the preset opening pressure, then outlet valve 30 opens and fuel is discharged. The hot discharged fuel, partially liquid and partially vapor, is additionally heated by heating element 43 and by outlet valve 30 which is also heated by the heating element 43. As the hot mixture of liquid and vaporized fuel is discharged into intake tube 60 under a defined pressure, its expansion causes additional vaporization of liquid fuel.” In the Final Office Action, the Examiner refers to intake tube 60 as a metering chamber. Thus, vaporization occurs even after the fuel enters metering chamber 60 of the internal combustion engine. Thus, Krohn et al., does not disclose each and

every element of claim 14 as set forth in the claim, nor does Krohn et al. show the identical subject matter in as complete detail as is contained in the claim. Since Krohn et al. does not disclose, or even suggest, all of the features recited in claim 14, it is therefore respectfully submitted that Krohn et al. does not anticipate claim 14.

As for claims 15 to 17, 19 to 24, 26 and 28 which depend from claim 14 and therefore include all of features recited in claim 14, it is respectfully submitted that Krohn et al. do not anticipate these dependent claims for at least the same reasons set forth above in support of the patentability of claim 14.

In view of all of the foregoing, reversal of this rejection with respect to claims 14 to 17, 19 to 24, 26 and 28 is respectfully requested.

**B. Rejection of Claim 25 Under 35 U.S.C. § 103(a)**

Claim 25 stands finally rejected under 35 U.S.C. § 103(a) as unpatentable over Krohn et al. It is respectfully submitted that Krohn et al. does not render unpatentable claim 25 for at least the following reasons.

In order for a claim to be rejected for obviousness under 35 U.S.C. § 103(a), the prior art must teach or suggest each element of the claim. See Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 934 (Fed. Cir. 1990), cert. denied, 111 S. Ct. 296 (1990); In re Bond, 910 F.2d 831, 834 (Fed. Cir. 1990). In addition, as clearly indicated by the Supreme Court, it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed. See KSR Int’l Co. v. Teleflex, Inc., 127 S. Ct. 1727 (2007). Further, the Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. M.P.E.P. §2143.

Claim 25 ultimately depends from claim 14. As more fully set forth above, Krohn et al. does not disclose, or even suggest, the features that the heating element delivers heat at least to a part of at least one of a metering conduit, an adapter, a metering device, and a nozzle body, and wherein the fuel is heated into an entirely vapor phase.

Accordingly, it is respectfully submitted that Krohn et al. does not disclose, or even suggest, all of the features included in claim 14, from which claim 25 ultimately depends. As such, it is respectfully submitted that Krohn et al. does not render unpatentable claim 25, which ultimately depends from claim 14. *In re Fine, supra* (any dependent claim that depends from a non-obvious independent claim is non-obvious).

In view of all of the foregoing, reversal of this rejection is respectfully requested.

**8. CONCLUSION**

For at least the reasons indicated above, Appellant respectfully submits that the art of record does not disclose or suggest the subject matter as recited in the claims of the above-identified application. Accordingly, it is respectfully submitted that the subject matter recited in the claims of the present application is new, non-obvious and useful. Reversal of all of the rejections set forth in the Final Office Action is therefore respectfully requested.

Respectfully submitted,

Dated: April 6, 2009

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## **CLAIMS APPENDIX**

14. A dosing device for a liquid fuel, for input into a chemical reformer in order to recover hydrogen or into a post-combustion device in order to generate heat, comprising:
  - at least one metering device to meter fuel into a metering conduit;
  - a nozzle body adjoining the metering conduit, the nozzle body having at least one spray discharge opening which opens into a metering chamber; and
  - at least one heating element with which heat can be delivered to the fuel, including at least one of a wire braid networked in mesh fashion, and a tubular hollow element, wherein the heating element delivers heat at least to a part of at least one of the metering conduit, the adapter, the metering device, and the nozzle body, and wherein the fuel is heated into an entirely vapor phase.
15. The dosing device as recited in claim 14, further comprising:
  - an adapter, the metering conduit and the metering device being joined in hydraulically sealed and detachable fashion by way of the adapter.
16. The dosing device as recited in claim 15, wherein the adapter has an air inlet that is connected, in the adapter, to the metering conduit.
17. The dosing device as recited in claim 14, wherein the heating element is operated or heated electrically.
19. The dosing device as recited in claim 14, wherein the heating element is immobilized using an attachment element made of one of plastic, dip resin, or ceramic.
20. The dosing device as recited in claim 19, wherein at least one of the heating element and the attachment element is at least partially surrounded by an insulating layer made of one of a temperature-resistant plastic or ceramic.
21. The dosing device as recited in claim 14, wherein the heating element is regulated in terms of heat output by a controller.
22. The dosing device as recited in claim 21, wherein the heating element is controlled based on a temperature in the metering chamber.
23. The dosing device as recited in claim 21, wherein the heating element is controlled based on operating parameters.

24. The dosing device as recited in claim 14, wherein the metering device is a fuel injection valve.

25. The dosing device as recited in claim 24, wherein the fuel injection valve is a low-pressure fuel injection valve that operates at fuel pressures of up to 10 bar.

26. The dosing device as recited in claim 14, wherein the metering conduit has in an axial extent at least one reduced-wall-thickness region.

28. The dosing device as recited in claim 14, wherein the heating element is disposed at least one of: i) in the nozzle body, ii) in the metering conduit, iii) in the adapter, and iv) in or on the metering device.

## **EVIDENCE APPENDIX**

No evidence has been submitted pursuant to 37 C.F.R. §§1.130, 1.131, or 1.132. No other evidence has been entered by the Examiner or relied upon by Appellant in the appeal.

**RELATED PROCEEDINGS APPENDIX**

As indicated above in Section 2 of this Appeal Brief, “[t]here are no other prior or pending appeals, interferences or judicial proceedings known by the undersigned, or believed by the undersigned to be known to Appellant or the assignee, ROBERT BOSCH GMBH, ‘which may be related to, directly affect or be directly affected by or have a bearing on the Board’s decision in the pending appeal.’” As such, there no “decisions rendered by a court or the Board in any proceeding identified pursuant to [37 C.F.R. § 41.37(c)(1)(ii)]” to be submitted.